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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/712,227	11/15/2000	Noriko Kawai	1035-291	8669
23117	7590	07/01/2005	EXAMINER	
NIXON & VANDERHYE, PC 901 NORTH GLEBE ROAD, 11TH FLOOR ARLINGTON, VA 22203			NORRIS, JEREMY C	
			ART UNIT	PAPER NUMBER
			2841	

DATE MAILED: 07/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

*[Handwritten mark]*

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/712,227	KAWAI ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	***		

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 1/18/2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 4-7, 18-27, 29-33 and 36-39 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 4-7, 18-27, 29-33 and 36-39 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

### ***Claim Objections***

Claims 6, 7 and 21 are objected to because they do not make sense.

Re claims 6 and 21, the last three lines do not make sense. To apply art, examiner interprets this to mean that the first and second protecting films each have an end close to the terminal portion, the insulating substrate has an end where the terminal is located, and said end of the second protecting film is farther from said end of the insulating substrate than said end of the first protecting film.

Re claim 7, it is unclear what the first and second wiring board and thus what exactly is the boundary. To apply art, examiner assumes that the claim requires one end of the substrate of the component to be at least 0.2mm away from an end of the insulating substrate. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 4-6, 18-21, 24-25 are rejected under 35 U.S.C. 102(b) as being anticipated by Ceresa et al. (US 3967162, hereafter Ceresa).

Claim 4: In figure 3 and column 3, Ceresa discloses a flexible insulating substrate (20) with first wirings (to the left side of figure 3), first insulating protecting film (22 or 34 to the left side of figure 3), second wiring (to the right side of figure 3), second protecting

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film (22 or 34 to the right side of figure 3) and terminal portions (26, 26a). The protecting films are formed of polymer (col. 3, line 16, see also the cross hatching of the layers) and are attached by adhesive (column 3, line 42 and column 4 line 4). They do not cover the terminal portions of the wirings (see the figures and col. 4, lines 3-5). The first and second protecting films are thinner than the insulating substrate.

Claim 5: The thickness of the protecting films is less than half of the thickness of the insulating substrate.

Claim 6: See the explanation above for claim 4. Consider the terminal portion to be that on the upper left side. Consider the first and second protecting films to be those lengths of (22 or (34) on either side of the figure to yield the claimed dimensional relationship. Since the preamble of the claim is open-ended, existence of other terminals is not precluded.

Claim 18: See the explanation for claim 4, which identifies all of the elements.

Claim 19: See the explanation for claim 4, which identifies all of the elements.

Claim 20: The thickness of the protecting films is less than half of the thickness of the insulating substrate.

Claim 21: See the explanation above for claim 6, which identifies all of the elements and explains how the dimensional requirement is met.

Claim 24: Consider the terminal portion to be the one on the upper left-hand side. Then, it is provided on the first wiring and not on the second.

Claim 25: Consider the terminal portion to be the one on the upper left-hand side. Then, it is provided on the first wiring and not on the second.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 7 and 22-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ceresa, as applied to claim 4 above.

Claim 7 depends from claim 4 and further recites that one end of the component substrate to be at least 0.2mm from one end of the insulating substrate. Ceresa teaches all of the limitations except for this at least 0.2mm spacing. Consider one end of the component substrate to be the lower end (bottom of figure 3) and consider the end of the insulating substrate to the end at the top of figure 3. Then it can be seen that the spacing of the two ends is the width of the device. It is well known that the dimension of these devices in 1976 when the Ceresa patent was issued was in the range of inches. Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to use standard size parts to provide a cost effective assembly. Use of standard size devices in 1976 would have resulted in a spacing of at least 0.2 mm, and would have actually been in the order of inches (each inch is 25.4 mm), as the typical size of such devices would have been in that range.

Claim 22-23: The explanation above with respect to claim 4 sets forth all of the element-to-element matching for claims 22-23, except for the connection of the wirings. As such, Ceresa discloses all of the limitations of these claims, except for the first and second wirings not being in electrical communication. Nevertheless, it is old and well known to connect wirings on opposite sides of a circuit board as needed to formulate whatever circuit is needed. Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to not connect the first and second wirings for the purpose of providing separate signal lines that are not shorted to each

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other, depending on the design on the circuit being carried on the board, formulating such connections based on circuit design being old and well known.

Claims 26-27 and 29-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ceresa and Buchoff et al. (US 3971610, hereafter Buchoff).

Claim 26-27, 29-31 depend from claims 4, 6, 18, 19 and 21 and further recite that the first and second wirings are connected by a through hole. Ceresa discloses all of the limitations as explained above, except for the through hole.

Buchoff discloses it known to connect wirings on opposite sides of a flexible board with a through hole (see cover figure). Therefore, it would have been obvious to one of ordinary skill, at the time the invention was made, to connect the first and second wirings of Ceresa with through holes, as taught by Buchoff, for the purpose of forming inter-board connections depending on the particular design of the circuit on the board.

Claims 32, 36, 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ceresa, as applied to claim 4, 18, 19 above, further in view of Devries et al. (US 3573345, hereafter Devries) and Reed, Jr. et al. (US 3596228, hereafter Reed).

Claims 32, 36 and 38 depend from claims 4, 18 and 19 and further recite that the thickness of one of the protecting films is 12.5 to 25 micrometer. Ceresa discloses all of the invention except for specifying that the thickness of protecting films.

Devries and Reed both disclose cover layers in the claimed thicknesses. Devries discloses cover layer (12), which is a protecting film to be about 1 mil, which is about 25

microns. Reed discloses Mylar® protecting layers in the ranges of 0.5 to 20 mils, which is about 12 micrometers to 500 micrometers. As such, the claimed size range is old and well known.

It would have been obvious to one of ordinary skill in the art, at the time of the invention, to make the first and second protecting layers of Ceresa in the range of 12-25 micrometers for the purpose of providing the appropriate thickness to balance between the desired flexibility and overall weight and the desired level of protection afforded, such a size range being known in the art as evinced by Devries and Reed.

Claims 33, 37 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ceresa, Devries and Reed, as applied above to claims 32, 36 and 38, further in view of Olyphant, Jr. et al. (US 3832769, hereafter Olyphant).

Ceresa in view of Devries and Reed disclose all of the claimed limitations of claims 33, 37 and 39, except for the thickness of the insulating substrate being between 12.5 micrometers to 50 micrometers.

Olyphant discloses base flexible substrate (12) with a thickness in the range of 0.1 to 10 mils, which is about 2.54 to 254 microns.

It would have been obvious to one of ordinary skill in the art, at the time the invention was made to form the thickness of the substrate of the combined Ceresa, Devries, Reed device to be 12.5-50 microns, such a range being known in the art as evinced by Olyphant, for purpose of providing sufficient support by the base without compromising flexibility and lightness of weight.

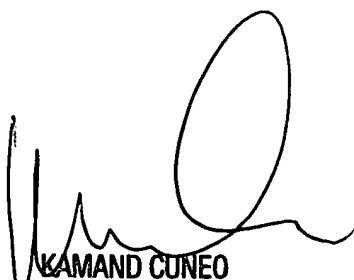


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ex. Norris whose telephone number is 571-272-1932. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, SPE Cuneo can be reached on 571-272-1957. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kc for JN



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